

## PCT REQUEST

Paper Copy (NOT for submission)

0	For receiving Office use only	
0-1	International Application No.	
0-2	International Filing Date	
0-3	Name of receiving Office and "PCT International Application"	
0-4	Form - PCT/RO/101 PCT Request	
0-4-1	Prepared Using	PCT-SAFE Version 3.50 (Build 0002.158)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	Korean Intellectual Property Office (RO/KR)
0-7	Applicant's or agent's file reference	NA-21657-PCT
I	Title of invention	FINE FILTERING APPARATUS CONTROLLABLE PACKING DENSITY USING FLEXIBLE FIBER
II	Applicant	
II-1	This person is:	applicant only
II-2	Applicant for	all designated States except US
II-4	Name:	NANOENTECH CO., LTD.
II-5	Address:	867-5 Eogok-dong Yangsan-city, Kyungsangnam-do626-220 Republic of Korea
II-6	State of nationality	KR
II-7	State of residence	KR
II-8	Telephone No.	82-55-388-2511
II-9	Facsimile No.	82-55-388-2544
II-11	Applicant's registration No. with the Office	1-2001-009209-8

## PCT REQUEST

Paper Copy (NOT for submission)

III-1	Applicant and/or inventor	applicant and inventor all designated States HAN, Ki-Baek 107-1603 Yangjeong Hyundai Apt., Yangjeong1-dong, Busanjin-gu Busan-city614-754 Republic of Korea
III-1-1	This person is:	
III-1-2	Applicant for	
III-1-4	Name (LAST, First)	
III-1-5	Address:	
III-1-6	State of nationality	KR
III-1-7	State of residence	KR
III-1-11	Applicant's registration No. with the Office	4-2000-009428-2
III-2	Applicant and/or inventor	applicant and inventor US only KIM, Hyo-Sang 214-1704 Byuksan Apt., Jwa-dong, Haewoondae-gu Busan-city612-766 Republic of Korea
III-2-1	This person is:	
III-2-2	Applicant for	
III-2-4	Name (LAST, First)	
III-2-5	Address:	
III-2-6	State of nationality	KR
III-2-7	State of residence	KR
III-3	Applicant and/or inventor	applicant and inventor US only ROH, Myung-Gyoo 101-203 Samik Apt. 573 Macheon-dong, Songpa-gu Seoul138-120 Republic of Korea
III-3-1	This person is:	
III-3-2	Applicant for	
III-3-4	Name (LAST, First)	
III-3-5	Address:	
III-3-6	State of nationality	KR
III-3-7	State of residence	KR

## PCT REQUEST

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III-4	Applicant and/or inventor	
III-4-1	This person is:	applicant and inventor
III-4-2	Applicant for	US only
III-4-4	Name (LAST, First)	HWANG, Moon-Hyun
III-4-5	Address:	105-301 Daedong Hwangtobang Apt. 696-1 Jungbu-dong Yangsan-city, Kyungsangnam-do626-050 Republic of Korea
III-4-6	State of nationality	KR
III-4-7	State of residence	KR
III-5	Applicant and/or inventor	
III-5-1	This person is:	applicant and inventor
III-5-2	Applicant for	US only
III-5-4	Name (LAST, First)	CHO, Chul-Hee
III-5-5	Address:	101-201 Now Family Apt. 796 Shinnae1-dong, Jungang-gu Seoul131-868 Republic of Korea
III-5-6	State of nationality	KR
III-5-7	State of residence	KR
III-6	Applicant and/or inventor	
III-6-1	This person is:	applicant and inventor
III-6-2	Applicant for	US only
III-6-4	Name (LAST, First)	PARK, Sung-Ho
III-6-5	Address:	4/2, 250-2727 Bansong3-dong, Haewoondae- gu Busan-city612-804 Republic of Korea
III-6-6	State of nationality	KR
III-6-7	State of residence	KR
III-7	Applicant and/or inventor	
III-7-1	This person is:	applicant and inventor
III-7-2	Applicant for	US only
III-7-4	Name (LAST, First)	YOO, Sang-Woong
III-7-5	Address:	37-1 Shinseon3-ga, Youngdo-gu Busan-city606-053 Republic of Korea
III-7-6	State of nationality	KR
III-7-7	State of residence	KR

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III-8	Applicant and/or inventor	applicant and inventor US only HONG, Sung-Kyu 128-14 Jangjeon1-dong, Geumjeong-gu Busan-city609-837 Republic of Korea KR
III-8-1	This person is:	
III-8-2	Applicant for	
III-8-4	Name (LAST, First)	
III-8-5	Address:	
III-8-6	State of nationality	KR
III-8-7	State of residence	KR
III-9	Applicant and/or inventor	applicant and inventor US only LEE, Sung-Hoon Rm. 206 Seonam Yecnrib, Seonam-dong, Nam-gu Ulsan-city680-100 Republic of Korea KR
III-9-1	This person is:	
III-9-2	Applicant for	
III-9-4	Name (LAST, First)	
III-9-5	Address:	
III-9-6	State of nationality	KR
III-9-7	State of residence	KR
III-10	Applicant and/or inventor	applicant and inventor US only KIM, Chun-Keyng 101-703 Daedong Apt., Oncheon2-dong, Dongrae-gu Busan-city607-062 Republic of Korea KR
III-10-1	This person is:	
III-10-2	Applicant for	
III-10-4	Name (LAST, First)	
III-10-5	Address:	
III-10-6	State of nationality	KR
III-10-7	State of residence	KR

## PCT REQUEST

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IV-1	Agent or common representative; or address for correspondence  The person identified below is hereby/ has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name (LAST, First)	LEE, Young-Pil
IV-1-2	Address:	The Cheonghwa Bldg. 1571-18 Seocho-dong, Seocho-gu Seoul 137-874 Republic of Korea
IV-1-3	Telephone No.	82-2-588-8585
IV-1-4	Facsimile No.	82-2-588-8586
IV-1-5	e-mail	iplaw@yplee.co.kr
IV-1-6	Agent's registration No.	9-1998-000334-6
V	DESIGNATIONS	
V-1	The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.	
V-2	Item V-2 may be used to exclude (irrevocably) the designations concerned in order to avoid the ceasing of the effect, under the national law, of an earlier national application from which priority is claimed. As to the consequences of such national law provisions in these and certain other States, see Designations in PCT-SAFE Help.	KR
VI-1	Priority claim of earlier national application	
VI-1-1	Filing date	08 March 2004 (08.03.2004)
VI-1-2	Number	10-2004-0015580
VI-1-3	Country	KR
VI-2	Priority document request	
	The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1
VII-1	International Searching Authority Chosen	Korean Intellectual Property Office (ISA/KR)

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VIII	<b>Declarations</b>	<b>Number of declarations</b>	
VIII-1	Declaration as to the identity of the inventor	-	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	-	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	-	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	-	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	-	
IX	<b>Check list</b>	<b>number of sheets</b>	<b>electronic file(s) attached</b>
IX-1	Request (including declaration sheets)	7	✓
IX-2	Description	10	✓
IX-3	Claims	3	✓
IX-4	Abstract	1	✓
IX-5	Drawings	12	✓
IX-7	TOTAL	33	
	<b>Accompanying items</b>	<b>paper document(s) attached</b>	<b>electronic file(s) attached</b>
IX-8	Fee calculation sheet	-	✓
IX-17	PCT-SAFE physical media	-	-
IX-19	Figure of the drawings which should accompany the abstract	2	
IX-20	Language of filing of the international application	Korean	
X-1	Signature of applicant, agent or common representative	(PKCS7 Digital Signature)	
X-1-1	Name (LAST, First)	LEE, Young-Pil	
X-1-2	Name of signatory		
X-1-3	Capacity		

## PCT REQUEST

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## FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/KR
10-6	Transmittal of search copy delayed until search fee is paid	

## FOR INTERNATIONAL BUREAU USE ONLY

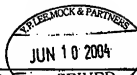
11-1	Date of receipt of the record copy by the International Bureau	
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## PATENT COOPERATION TREATY

PCT

NOTIFICATION OF RECEIPT OF  
RECORD COPY

(PCT Rule 24.2(a))



From the INTERNATIONAL BUREAU

To:

LEE, Young-Pil  
The Cheonghwa Bldg.  
1571-18 Seocho-dong  
Seocho-gu  
Seoul 137-874  
Republic of Korea

Date of mailing (day/month/year) 27 May 2004 (27.05.2004)	RECEIVED	IMPORTANT NOTIFICATION
Applicant's or agent's file reference NA-21657-PCT		International application No. PCT/KR2004/000576

The applicant is hereby notified that the International Bureau has received the record copy of the international application as detailed below.

Name(s) of the applicant(s) and State(s) for which they are applicants:

NANOENTECH CO. LTD. (for all designated States except US)

HAN, Ki-Baek (all designated States)

KIM, Hyo-Sang et al (for US)

International filing date : 17 March 2004 (17.03.2004)

Priority date(s) claimed : 08 March 2004 (08.03.2004)

Date of receipt of the record copy  
by the International Bureau : 05 April 2004 (05.04.2004)

List of designated Offices :

AP : BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW

EA : AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

EP : AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR

OA : BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG

National : AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer:

Sudha RAMAKRISHNAN

Facsimile No. (41-22) 338.70.90

Telephone No. (41-22) 338 8516



## Continuation of Form PCT/IB/301

## NOTIFICATION OF RECEIPT OF RECORD COPY

Date of mailing (day/month/year) 27 May 2004 (27.05.2004)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference NA-21657-PCT	International application No. PCT/KR2004/000576

**ATTENTION**

The applicant should carefully check the data appearing in this Notification. In case of any discrepancy between these data and the indications in the international application, the applicant should immediately inform the International Bureau.

In addition, the applicant's attention is drawn to the information contained in the Annex, relating to:

☒ time limits for entry into the national phase - see updated important information (as of April 2002)

☐ requirements regarding priority documents (if applicable)

A copy of this Notification is being sent to the receiving Office and to the International Searching Authority.

## INFORMATION ON TIME LIMITS FOR ENTERING THE NATIONAL PHASE

The applicant is reminded that the "national phase" must be entered before each of the designated Offices indicated on the cover sheet of this Notification by paying national fees and furnishing translations, as prescribed by Articles 22 and 39 and the applicable national laws. In addition, the applicant may also have to comply with other special requirements applicable in certain Offices. It is the applicant's responsibility to ensure the necessary steps to enter the national phase are taken in a timely fashion. Most Offices do not issue reminders to applicants in connection with the entry into the national phase.

The applicable time limit for entering the national phase will, subject to what is said in the following paragraph, be 30 MONTHS from the priority date, not only in respect of any elected Office if a demand for international preliminary examination is filed before the expiration of 19 months from the priority date (see Article 38(1)), but also in respect of any designated Office, in the absence of filing of such demand, where Article 22(1) as modified with effect from 1 April 2002 applies in respect of that designated Office. For further details, see PCT Gazette No. 44/2001 of 1 November 2001, pages 19926, 19932 and 19934, as well as the PCT Newsletter, October and November 2001 and February 2002 issues.

In practice, time limits other than the 30-month time limit will continue to apply, for various periods of time, in respect of certain designated or elected Offices. For regular updates on the applicable time limits (20, 21, 30 or 31 months, or other time limit), Office by Office, refer to the PCT Gazette ("Section IV" part published on a weekly basis), to the PCT Newsletter (on a monthly basis) and to the relevant National Chapters in Volume II of the PCT Applicant's Guide (the paper version of which is updated usually twice a year and the Internet version of which is updated usually on a weekly basis). Finally, a cumulative table of all applicable time limits for entering the national phase is available from WIPO's Internet site, via links from various pages the site including those of the Gazette, Newsletter and Guide, at <http://www.wipo.int/pct/en/index.html>.

Information about the requirements for filing a demand for international preliminary examination is set out in the PCT Applicant's Guide, Volume I/A, Chapter IX. Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination (at present, all PCT Contracting States are bound by Chapter II).

## REQUIREMENTS REGARDING PRIORITY DOCUMENTS

For applicants who have not yet complied with the requirements regarding priority documents, the following is recalled.

Where the priority of an earlier national, regional or international application is claimed, the applicant must submit a copy of the said earlier application, certified by the authority with which it was filed ("the priority document") to the receiving Office (which will transmit it to the International Bureau) or directly to the International Bureau, before the expiration of 16 months from the priority date, provided that any such priority document may still be submitted to the International Bureau before that date of international publication of the international application, in which case that document will be considered to have been received by the International Bureau on the last day of the 16-month time limit (Rule 17.1(e)).

Where the priority document is issued by the receiving Office, the applicant may, instead of submitting the priority document, request the receiving Office to prepare and transmit the priority document to the International Bureau. Such request must be made before the expiration of the 16-month time limit and may be subjected by the receiving Office to the payment of a fee (Rule 17.1(b)).

If the priority document concerned is not submitted to the International Bureau or if the request to the receiving Office to prepare and transmit the priority document has not been made (and the corresponding fee, if any, paid) within the applicable time limit indicated under the preceding paragraphs, any designated State may disregard the priority claim, provided that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within the time limit which is reasonable under the circumstances (Rule 17.1(c)).

Where several priorities are claimed, the priority date to be considered for the purposes of computing the 16-month time limit (and all other PCT time limits) is the filing date of the earliest application whose priority is claimed (Article 2(xi)(b)).

## PCT COOPERATION TREATY

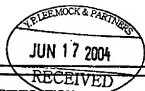
PCT

From the INTERNATIONAL BUREAU

NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

To:

LEE, Young-Pil  
The Cheonghwa Bldg.  
1571-18 Seocho-dong  
Seocho-gu  
Seoul 137-874  
Republic of Korea

Date of mailing (day/month/year) 09 June 2004 (09.06.2004)	
Applicant's or agent's file reference NA-21657-PCT	IMPORTANT NOTIFICATION
International application No. PCT/KR2004/000576	International filing date (day/month/year) 17 March 2004 (17.03.2004)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 08 March 2004 (08.03.2004)
Applicant NANOENTECH CO. LTD. et al	

- By means of this Form, which replaces any previously issued notification concerning submission or transmittal of priority documents, the applicant is hereby notified of the date of receipt by the International Bureau of the priority document(s) relating to all earlier application(s) whose priority is claimed. Unless otherwise indicated by the letters "NR", in the right-hand column or by an asterisk appearing next to a date of receipt, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
- If applicable The letters "NR" appearing in the right-hand column denote a priority document which, on the date of mailing of this Form, had not yet been received by the International Bureau under Rule 17.1(a) or (b). Where, under Rule 17.1(a), the priority document must be submitted by the applicant to the receiving Office or the International Bureau, but the applicant fails to submit the priority document within the applicable time limit under that Rule, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
- If applicable An asterisk(\*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b) (the priority document was received after the time limit prescribed in Rule 17.1(a) or the request to prepare and transmit the priority document was submitted to the receiving Office after the applicable time limit under Rule 17.1(b)). Even though the priority document was not furnished in compliance with Rule 17.1(a) or (b), the International Bureau will nevertheless transmit a copy of the document to the designated Offices, for their consideration. In case such a copy is not accepted by the designated Office as priority document, Rule 17.1(c) provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

Priority date	Priority application No.	Country or regional Office or PCT receiving Office	Date of receipt of priority document
08 Marc 2004 (08.03.2004)	10-2004-0015580	KR	02 Apr 2004 (02.04.2004)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer  Michelle NDOME MAKAKE
Facsimile No. (41-22) 338.70.90	Telephone No. (41-22) 338 8398

특 허 협 력 조 약  
(PATENT COOPERATION TREATY)

발신: 국제조사기관

수신:

LEE, Young-Pil

The Cheonghwa Bldg. 1571-18 Seocho-dong, Seocho-gu Seoul 137-874, Republic of Korea

PCT

국제조사보고서 및 국제조사기관의 견해서,  
또는 국제조사보고서  
부작성 선언서 송부 통지서  
(PCT 규칙 44.1)



발송일 (일/월/년) 21 DECEMBER 2004 (21.12.2004)

출원인 또는 대리인 서류참조기호  
NA-21657-PCT

이후의 절차에 대하여는 아래 1. 및 4. 참조

국제출원번호  
PCT/KR2004/000576

국제출원일 (일/월/년) 17 MARCH 2004 (17.03.2004)

출원인

NANOENTECH CO., LTD. et al

1. ☒ 국제보고서 및 국제조사기관의 견해서가 작성되어 이를 송부함을 출원인에게 통지합니다.  
조약 제19조의 규정에 의한 보정서 및 설명서의 제출:  
희망하는 경우 출원인은 국제출원의 청구의 범위를 보정할 수 있습니다.(조약규칙 46):  
기간 보정서 제출기간은 통상 국제조사보고서 송부일로부터 2월.

제출처 The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland  
Faxccinle No.: +41 22 740 14 35

보다 자세한 지침에 대하여는 첨부되는 용지에 기재된 설명을 참조.

2. ☐ 국제조사보고서가 작성되지 아니할 것이며 조약 제17조(2)(a)의 규정에 의한 선언서 및 국제조사기관의 견해서가 송부됨을 출원인에게 통지합니다.
3. ☐ 조약규칙 40.2의 규정에 의한 추가수수료 납부에 대한 이의신청과 관련하여 아래 사항을 출원인에게 통지합니다.
- ☐ 이의신청 및 이의신청에 대한 결정 통지서를 출원인이 제출한 이의신청 및 이의신청에 대한 결정 통지서의 지정관청에 송부 신청서와 함께 국제사무국에 송부하였습니다.
  - ☐ 이의신청에 대한 결정이 아직 이루어지지 않았습니; 결정이 이루어지는 대로 출원인에게 통지할 것입니다.

4. 주의사항

우선일부터 18월 만료후 국제사무국은 국제출원을 공개합니다. 공개를 하지 않거나 또는 연기할 것은 희망하는 경우에는 출원인은 국제공개의 기술적 준비가 완료되기 전에 각각의 경우에 따라 조약 규칙 90bis.1 및 90bis.3의 규정에 의한 국제출원 취하서 또는 우선권장 취하서를 국제사무국에 제출하여야 합니다.

출원인은 비공식적으로 국제조사기관의 견해서에 대한 의견서를 국제사무국에 제출할 수 있다. 국제사무국은 국제예비심사보고서가 작성되지 아니할 경우 당해 의견서의 사본을 모든 지정관청에 송부 할 것이다. 당해 의견서는 공개에 이용가능하게 될 것이나, 우선일부터 30일 만료 전에는 그러하지 아니하다. 일부 지정관청에 대하여는 출원인이 우선일부터 30일까지 (일부관청에 대하여는 더 늦을 수도 있음) 국내단계의 개시를 연기하고자 하는 경우에는 우선일부터 19월 이내에 국제예비심사를 청구하여야 합니다; 그렇지 않은 경우 출원인은 우선일부터 20월 이내에 당해 지정관청에 대한 국내단계의 개시를 위한 규정된 절차를 밟아야 합니다.

다른 지정관청에 대하여는 우선일부터 19월 이내에 국제예비심사를 청구하지 않더라도 30월(또는 더 늦을 수도 있음)의 기간이 적용될 것입니다.

서식 PCT/IB/301의 부속서류를 참조하기 바람. 각 특허청마다 적용기간에 대한 구체적인 사항은 PCT출원인 안내 제2권 국내단계 및 WIPO 인터넷 사이트를 참조하시기 바랍니다.

ISA/KR의 명칭 및 우편주소



대한민국 특허청  
302-701 대한민국 대전광역시 서구 둔산동  
920번지 정부대전청사

특허청장



팩스 번호 82-42-472-7140

전화번호 82-42-481-5281

서식 PCT/ISA/220 (2004년 1월)

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference NA-21657-PCT	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. <b>PCT/KR2004/000576</b>	International filing date (day/month/year) <b>17 MARCH 2004 (17.03.2004)</b>	(Earliest) Priority Date (day/month/year) <b>08 MARCH 2004 (08.03.2004)</b>
Applicant <b>NANOENTECH CO., LTD. et al</b>		

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II)

3. ☐ Unity of invention is lacking (See Box No. III)

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 2

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

b. ☐ none of the figure is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2004/000576

**A. CLASSIFICATION OF SUBJECT MATTER****IPC7 B01D 29/66, B01D 35/30**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC7 B01D, C02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Patents and applications for inventions since 1975,  
 Korean Utility models and applications for utility models since 1975,  
 Japanese Utility models and applications for utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 eKIPASS, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 2003-94150 A (NANOENTECH CO., LTD.) 11 DECEMBER 2003 See abstract and claims	1-12
A	WO 00/63122 A1 (ASAHI KASEI CO., LTD.) 26 OCTOBER 2000 See the whole document	1
A	JP 7-178320 A (MITSUBISHI RAYON CO., LTD.) 18 JULY 1995 See abstract and figure 1	1
A	WO 02/11867 A1 (TORAY INDUSTRIES, INC.) 14 FEBRUARY 2002 See figure 1, 2	1
A	JP 9-262443 A (SANKI ENG CO., LTD.) 7 OCTOBER 1997 See abstract and figures	1

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family


Date of the actual completion of the international search

17 DECEMBER 2004 (17.12.2004)

Date of mailing of the international search report

**21 DECEMBER 2004 (21.12.2004)**

Name and mailing address of the ISA/KR

 Korean Intellectual Property Office  
 920 Dunsan-dong, Seo-gu, Daejeon 302-701,  
 Republic of Korea  
 Facsimile No. 82-42-472-7140

Authorized officer

BYUN, Sang Hyun

Telephone No. 82-42-481-5566



# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2004/000576

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 2003-94150 A	11.12.2003.	KR 425907 B1	01.04.2004.
WO 00/63122 A1	26.10.2000.	EP 1088792 A1	04.04.2001.
		US 6322703 BA	27.11.2001.
		US 6495041 BB	17.12.2002.
		AU 742973 B2	17.01.2002.
		CA 2332845 AA	26.10.2000.
JP 7-178320 A	18.07.1995.	None	
WO 02/11867 A1	14.02.2002.	JP 2002-113333 A2	16.04.2002.
		AU 200175787 A5	18.02.2002.
		CA 2385946 AA	14.02.2002.
		TW 505539 B	11.10.2002.
		EP 1350555 A1	08.10.2003.
		CN 1392802 T	22.01.2003.
		US 2003038075 AA	27.02.2003.
JP 9-262443 A	07.10.1997.	None	

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

LEE, Young-Pil

The Cheonghwa Bldg. 1571-18 Seocho-dong, Seocho-gu  
Seoul 137-874, Republic of Korea

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) **21 DECEMBER 2004 (21.12.2004)**

Applicant's or agent's file reference  
NA-21657-PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.  
**PCT/KR2004/000576**

International filing date (day/month/year)  
**17 MARCH 2004 (17.03.2004)**

Priority date (day/month/year)  
**08 MARCH 2004 (08.03.2004)**

International Patent Classification (IPC) or both national classification and IPC

**IPC7 B01D 29/66, B01D 35/30**

Applicant

**NANOENTECH CO., LTD. et al**

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**


If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA/KR

 Korean Intellectual Property Office  
920 Dunsan-dong, Seo-gu, Daejeon 302-701,  
Republic of Korea  
Facsimile No. 82-42-472-7140

Authorized officer

BYUN, Sang Hyun

Telephone No. 82-42-481-5566





WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/KR2004/000576

Box No. 1 Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format  
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/000576

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1-12	YES
	Claims		NO
Inventive step (IS)	Claims	1-12	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO

**2. Citations and explanations :**

Reference is made to the following document:

D1: KR 2003-94150 A (equivalent to KR 425907 B1)

The present invention relates to a fine filtering apparatus comprising:

a main body, filter media, a supplied water jacket, a filter media fixing plate, a density control plate having a doughnut shape, an inner porous chamber extending from the top of the main body and a concentrated filtrate discharge jacket.

D1 discloses a fine filtering apparatus comprising:

a main body, a water/air inlet pipe, a filter media fixing plate, a filtered water discharge jacket and a concentrated filtrate discharge jacket.

D1 does not provide the supplied water jacket, the density control plate and the inner porous chamber of the present invention.

In the light of D1, there is no reasonable basis to believe that the skilled one in the art could arrive at the subject matter of the claims without exercising inventive skill.

Therefore, the subject matter of claims 1-12 is considered to be novel, involve an inventive step and be industrially applicable under PCT Article 33(2)-(4).

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/000576

**Box No. VII Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).